

and *G. speciosa*, both of which, on comparison of specimens, are seen to be much more cylindrical. The latter differs in being decidedly smoother below, even glabrous, while *G. Iheringi* is striated to the base. The body-whorl is strongly swollen and convex, and the narrow moniliferous subsutural border is particularly distinct and elegant.

NEW PISIDIA, AND SOME GENERAL NOTES.

BY DR. V. STERKI.

PIS. IMBECILLE n. sp. Mussel minute, ovoid-oblong in outline, rather inflated; superior and inferior margins moderately curved, posterior slightly truncated obliquely outward, rounded below, antero-superior slightly curved or almost straight (oblique), anterior end rounded; beaks somewhat posterior, broad and low, slightly raised above the hinge margin in the adult; color pale yellowish horn to whitish; surface with very fine striation and a few slightly marked lines of growth, and with a slight waxy gloss; shell thin, hinge very fine and plate quite narrow; cardinal teeth very small, thin, or almost obsolete, lateral teeth small, the outer ones of the right valve scarcely visible; ligament fine.

Size: long. 2.3, alt. 1.8, diam. 1.3 mill.

Habitat: Byer's Trout Pond, and Button Lake, Kent Co., Mich., collected by Dr. R. J. Kirkland.

This is a well characterized species, not nearly related with any other, and can not be mistaken for mature specimens of any one. But it has much resemblance with very young examples of *Pis. variabile* Pr., of the same size, and it takes good care to discern them.—Our species will doubtless be found in other places; in Byer's Pond Dr. K. collected over four hundred specimens, and twenty-five in Button Lake. The name has been derived from its small size, thin shell, low, broad beaks, and some similarity in shape with *Anodonta imbecillis* Say.

Pis. peraltum, n. sp. Mussel of moderate size, somewhat oblique, very high, much inflated, beaks large, full and prominent; hinge margin strongly curved; posterior part, behind the beaks, very short, the margin high, slightly to distinctly truncated, passing into the well rounded inferior, with a wide, regular curve; antero-superior

margin slightly curved in a steep slope to the slightly angular, rounded anterior end; color light yellowish horn in the young and a zone along the margins in older species, in which the upper parts usually are grayish; surface slightly shining, finely and irregularly striated, with some deeper lines of growth usually of darker color; shell rather strong, nacre whitish to grayish, muscle insertions distinct; hinge stout, strongly curved, plate moderately broad; cardinal teeth short, the one in the right valve curved, its posterior part thick, and usually grooved; the anterior of the left valve short, stout, triangular, abrupt, with a deep groove, posterior short, oblique, curved; lateral teeth short, stout, high, pointed, the outer ones in the right valve quite small; ligament short, moderately strong.

Size: long. 3.8 alt. 3.8 diam. 2.8 mill.

Habitat: Crystal Lake, Benzie Co., Mich., collected (over 600 specimens) by Dr. R. J. Kirkland; also in Illinois, Iowa and Kentucky.

Typical specimens are easily distinguished from all other species—except an extreme form of *P. compressum* Pr., from the same place, having rounded beaks without ridges. Yet they are quite distinct. *P. peraltum* is somewhat variable: in some specimens, there are small but distinct projecting angles at the scutum, or scutellum, or both. Others are less high, and the beaks are not so full and prominent.

A few specimens (dead valves) from Havana, Ill., had been received from the Illinois State Laboratory of Nat. Hist. (Mr. Kofoid), in 1895; a few valves from Iowa City, Ia., were sent, in 1896, by Mr. Jas. H. Ferriss, and a few good specimens from Bowling Green, Ky., by Miss S. F. Price in 1899. While all these evidently were of the same *Pisidium*, they seemed not sufficient for establishing a new species upon them, but now proved identical with the Michigan form, and are valuable in showing a wide geographical distribution of our species.

Pisidia are becoming an important factor of our molluscan fauna. Owing to the efforts and the kindness of many conchologists in the United States and Canada, the writer had chances to examine a large number of specimens—over two hundred thousand, during the last five or six years, besides ten thousands of *Sphaeria* and *Calycu-*

lina. Yet they still represent only a small part of the country, and diligent, careful collecting in many more places and sections is badly needed.

That among such materials there should be many new forms was to be anticipated, but the results were beyond all expectations. This is partly proved by the many species already published. It seems to be necessary to add that the greatest care has been taken in establishing new species. All of them have been seen in every stage of growth; most are represented by hundreds and thousands of specimens, and, in fact, the geographical range of almost all is a wide one. And numerous new forms are in hand, partly have been for years, awaiting new materials for their confirmation. Not only the species in themselves are of interest and value, but also the study of their geographical distribution and their variations. Some of the *Pisidia* are extremely variable, and the same can be said of some of our *Sphaeria* and *Calyculina*, and their study is very difficult.

This is not the place for an account of the work done by all contributors, a summary of which will be given in a revision to be published. Yet two conchologists have done such work and their success is so unparalleled, the example given by them so suggestive and encouraging, that we can not pass them over in silence.

Mr. Olaf O. Nylander has, since '95, worked up Aroostook Co., Me., and, beside other mollusca, collected and sent for examination about 32,000 recent specimens and large numbers of fossil *Pisidia*. His careful collecting, under great difficulties, in many places over an extensive area of that northeastern part of our country, has added very materially to our knowledge of the molluscan fauna.¹

During the last four years also, Dr. R. J. Kirkland, of Grand Rapids, Mich., has collected and sent for examination about 123,000 *Pisidia* (over 70,000 in '99), and many thousand *Sphaeria* and *Pisidia*, most from Kent and some other counties of Michigan. And it is of importance that both these enthusiastic collectors, like some others also, have paid special attention to even the smallest specimens. Thus we became acquainted with some minute species, while the study of the young of all was greatly facilitated. On the other hand, it is very desirable, or rather indispensable, to have as large numbers of specimens as possible at disposition, from every locality.

¹ See Mr. Nylander's list in THE NAUTILUS XIII, p. 102. (Jan., 1900.)

considering the enormous variability of some species, in order to ascertain whether certain forms are really species, or varieties, or local variations.

J. B. QUINTARD.

It is with great regret that we learn of the death of our old correspondent, Mr. J. B. Quintard, which occurred at his home near Silver Lake, Shawnee county, Kansas, on December 17, 1899.

Born at Norwalk, Connecticut, October 21, 1839, he moved with his parents to Knox county, Ohio, in 1847. In December, 1859, he married Miss Madeline I. Watkins, and in May, 1860, they moved to Kansas, where he selected a site on the open prairie and made a home, which he occupied until his death.

He was a great lover and careful observer of nature, and early took up the study of Conchology. By his own labor in collecting and exchanging, he got together a large collection of shells, and especially of the land and fresh-water species. Mr. Quintard was known by correspondence to most western collectors of fresh-water shells, especially the *Unionidæ*.

GENERAL NOTES.

NOTE ON *VITREA RHODSI* Pils.—The distribution of this species would seem to be much more extended than was indicated when first described (NAUT. XII, 101). I have specimens from Traverse City and Charlevoix in this State, and Dr. R. J. Kirkland has recently discovered it in Ottawa county, which would indicate a general distribution through the western part of Michigan. It has not as yet been noticed in any of the eastern counties. I have also specimens from County Carlton, Ontario; Amherst, Mass., and Orange county, Va., which extend the range much further to the north and east than indicated by Mr. Pilsbry.—BRYANT WALKER.

NOTE ON THE HABITS OF *LIMNÆA MIGHELSI* W. G. Binn.—Extract from a letter of Dr. R. J. Kirkland: "I made a visit to Crystal Lake, Benzie county, Mich., in July and again in October. Along the shores are thousands of dead *Limnæa mighelsi* W. G. Binn.,